AMENDMENTS TO THE SPECIFICATION

Please add the following paragraphs before the last paragraph of p. 17:

The bit burst analysis information collected by data poller 42 comprises comprises a plurality of bit burst counters. Data that is nonperiodic, or transmitted at irregular intervals, is considered bursty in nature. Received data on a packet network is typically characterized by the size and extent of bursts occurring above a committed information rate (CIR). The counters used in the present invention will now be explained with reference to Fig. 6.

Depicted on the horizontal axis of graph 600 is time in intervals T_C, which may be separated in time if no data is sent. The beginning of a new T_C interval is synchronized to the detection of data. Shown on the vertical axis of graph 600 are the burst characterization categories, or buckets, of the present invention as a function of data rate. T_C (the committed rate measurement interval) is the time interval during which a user is allowed to send B_C (committed amount of data) or B_C (committed amount of data) plus B_e (excess amount of data). T_C is computed from the service parameters of CIR and B_C, as $T_C = B_C/CIR$, where CIR is the committed information rate and B_C is the committed amount of data. T_C is not a periodic measurement interval, but rather a sliding window that is triggered by the receipt of user data. Once the T_C interval (*i.e.*, 610, 611, etc. of Fig. 6) has been initiated, it continues until it completes its computed duration. For example, T_{C1} 610 is initiated upon receipt of burst data represented by point 602a. Once T_{C1} elapses another timing interval will only begin upon receipt of another burst transmission. This concept is illustrated by blank space 615 between timing interval T_{C1} and T_{C2}. Timing interval T_{C2} is not begun until the receipt of, in this example, data represented by point 602c.

Line 601 illustrates the committed information rate (CIR), which is the rate that the service provider typically guarantees to an end user. The points referenced by numerals 602, 603, 604 and 605 illustratively indicate detected bursts of data traffic detected at 0%-100% CIR, 101%-151% CIR, 151%-200% CIR, and 201%-300% CIR respectively. As can be seen, each burst of data is detected and categorized according to its data rate.

To illustrate the concept of burst data categories consider the following. The region of data rate between zero (0) and the CIR can be considered one category, or bucket. The region of data rate between, for example, the CIR and 150% CIR can be considered another category, or bucket. Similarly, the region between 151% CIR and 200% CIR may be another burst category, and the region of 201% CIR to 300% CIR may yet be another category. These categories are for illustrative purposes only and may be of varying scale. For example, the categories may alternatively be classified as a percentage of line rate, or the categories may be classified based upon raw data numbers.

The bit burst counters collected in the present invention allow the categorization of burst data in a plurality of categories in any given time interval. For example, in time interval T_{C1} 610 (typically, one (1) second) there may be transmitted multiple bursts of data illustrated by points 602a and 602b in one category, and point 604a in another category. The burst data represented by points 602a and 602b were classified as being somewhat less than the CIR while the burst data represented by point 604a is classified as being in the range of 151% CIR to 200% CIR. The counters collected in the present invention discriminate and track bursts of data at different rate categories occurring in a given time interval. Each time a new time interval is begun (*e.g.*, the T_{C2} interval denoted by 611), the data rate is reset to zero and as the data rate crosses a

threshold (*e.g.*, as a % of CIR, % of line rate, or a fixed number) the number of bits (or bytes) above the threshold is again counted in the category in which it occurs.

Each time that a burst occurs in a given category, a bit counter increments, thus keeping a count of the number of occurrences of burst data in each category. Each time that a burst is detected, a burst category database is updated.

Because the T_C timer is switched according to the receipt of data, better correlation with frame relay switch statistics can be achieved. For example, the burst information is still captured, however, there is less performance impact on the network management system (NMS), which can read fewer buckets in which the bursts are already categorized.

The aforementioned bursts of data (*i.e.*, 602, 603, *etc.*) could be identified as bits for higher resolution, or could be identified as bytes to prevent the counters from overflowing. Additionally, a frame count can be kept for each category such that the worst bit category for that frame would cause a frame count to be incremented. This may be desirable because service providers keep information based upon frame counts (as do frame relay switches). Keeping the frame counts allows the correlation of data with the switches inside a network for troubleshooting.